Navy Environmental Quality Fact Sheet

Do you dispose of used batteries?

Would you like to improve this process in the following areas?

- ***Meet environmental compliance regulations***. Reduce the volume of used batteries disposed of as hazardous waste. Media area is hazardous waste.

- ***Improve workers' safety and health***. Reduce personnel exposure to hazardous chemicals through proper battery storage handling.

- ***Increase productivity***. Reduce labor hours required for waste battery management.

- ***Save money***. Reduce battery disposal costs and new battery procurement costs.

Recycled Battery Components

Batteries used for a multitude of military and consumer applications can be recycled rather than disposed of. Types of batteries that can be recycled include: alkaline, lithium (all types and sizes), nickel cadmium (Ni-Cd), nickel metal hydride, magnesium, carbon zinc, silver zinc, lead acid, nickel hydrogen, and mercury. Recycling of lithium batteries poses a unique challenge. Each year lithium batteries are used in more applications than ever before due to long life, high voltage, low cost, wide operating temperature, light weight, and the development and application of the rechargeable-type (lithium ion) battery. The lithium metal battery contains highly reactive lithium that presents a fire hazard (when exposed to moisture while in storage) if not fully discharged and the lithium fully consumed. Lithium-ion batteries (rechargeable) do not contain metallic lithium and are recyclable through the Defense Reutilization and Marketing Service or the Rechargeable Battery Recycling Corporation (RBRC). Recycling of lithium batteries at NSWC Crane has realized a cost savings of over $863,000 and a disposal cost avoidance of $18.8 million. ***Battery recycling is being performed at NSWC Carderock, Naval Region Mid-Atlantic, and Naval Station Annapolis.***

How can you achieve these improvements?

Recycle used batteries.

How does this system work?

Contact your local battery recycler or local jurisdiction. Most types of batteries can be recycled through the Defense Reutilization and Marketing Service. A special Cost Line Item Number is availalble specifically for lithium battery recycling.

How will this system save you money?

Battery recycling will save money on storage, accidental mishaps, and landfill disposal. Recycling also reduces the risk of future financial liability associated with landfill disposal.

Typical Process Flow Diagram

MATERIALS
Lithium Batteries
Lead-Acid Batteries
Ni-Cd and other Batteries

→

PROCESS NAMES
Electronic, Automotive, and Consumer Equipment

→

WASTE PRODUCTS
Spent Batteries
Hazardous Waste

How can this method eliminate or reduce pollution?

This P2 method can reduce hazardous waste generation and recover usable materials. Implementation will result in the following pollution reductions:

- Reduces the amount of recoverable materials disposed of in landfills.
- Reduces the use of hazardous chemicals in battery maintenance through recycling.

Which shops can benefit most from this method?

Battery recycling can be practiced by Navy shops and organizations that use lithium and other batteries in their equipment and vehicles. Typical shops and applications include:

- Public Works Department
- Motor Pool
- Educational Training
- Electronic Equipment Department
- Aircraft Intermediate Maintenance Depot
- Shore Intermediate Maintenance Activity
- Morale, Welfare and Recreation
- Security Department
- Supply Department
- Fire and Safety Department

How can this method reduce regulatory compliance concerns?

Implementation of this P2 method will result in the following regulatory compliance benefits:

- Reduction in waste batteries helps facilities meet the requirement of waste minimization under RCRA, 40 CFR 262.41 (a)(6).
- Helps facilities reduce the quantity of waste batteries and the associated waste that must be managed to comply under RCRA, 40 CFR 262 (i.e., recordkeeping, reporting, inspections, transportation, accumulation time, and emergency response measures).

Achieving Environmental Compliance Through Pollution Prevention

Every day the Navy faces the challenge of operating and maintaining the fleet while complying with environmental regulations. This burden can be reduced by using pollution prevention technologies and methods to reduce compliance requirements. This fact sheet is one in a series designed to encourage activities to use pollution prevention technologies and methods. The overall goal of this series is to promote sustained environmental compliance at the lowest life-cycle cost.

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